

The diagram illustrates a mobile terminal 101 and its network connections. The mobile terminal 101 is shown with a layered architecture. The layers, from top to bottom, are: OS Service API (101-6), User Interface API (101-1), User Agent Layer (101-2), Transport Layer (101-3), Wireless Application Protocol Stack (101-4), and Bearer API (101-5). The terminal 101 is connected to a Wireless Network 100. The Wireless Network 100 includes a WAP Server 102 and an Internet or Intranet 103. The WAP Server 102 is connected to the Internet or Intranet 103. The Internet or Intranet 103 is further connected to a Web Server 103 and an Application Server 104.

Fig. 1

The diagram illustrates the architecture of a mobile device, organized into several horizontal layers:

- Bearer Level:** Contains the **UDP** layer.
- Protocol Level (Stack):** Contains the **Wireless Datagram Protocol (WDP) API**.
- Loader Level:** Contains the **Wireless Protocol Stack (WPS) API** and a **WPS Protocol** block. The WPS Protocol block includes:
 - Wireless Session Protocol (WSP)
 - Wireless Transaction Protocol (WTP)
 - Wireless Transaction Layer Security (WTLS)
 - Wireless Datagram Protocol (WDP)
- User Agent Level:** Contains **Loader APIs** and a **User Agent** block. The User Agent block includes:
 - HTTP Loader**, **URL Loader**, and **Cache** (collectively labeled 101-31).
 - Application Dispatcher** and **Content Dispatcher** (collectively labeled 101-32).
 - WSP Header Handling** and **WSP Adapter** (collectively labeled 101-33).
- User Interface Level:** Contains **VMML, VMML Script, and Push APIs** (labeled 101-21) and a **User Interface** block. The User Interface block includes:
 - Main Windows and Menus**, **Settings**, **Card Rendering**, and **Bookmarks** (collectively labeled 101-23).
- Utilities (Platform APIs):** A vertical column on the right side of the diagram, containing various system APIs:
 - Messaging System API (101-61)
 - Cache/Persistent Storage API (101-62)
 - Loading Services API (101-63)
 - Memory Management API (101-64)
 - String Services API (101-65)
 - Settings Services API (101-66)
 - Math API (101-67)
 - OS/File System API (101-68)
 - OS/Services API (101-69)
 - Time API (101-60)

Fig. 2

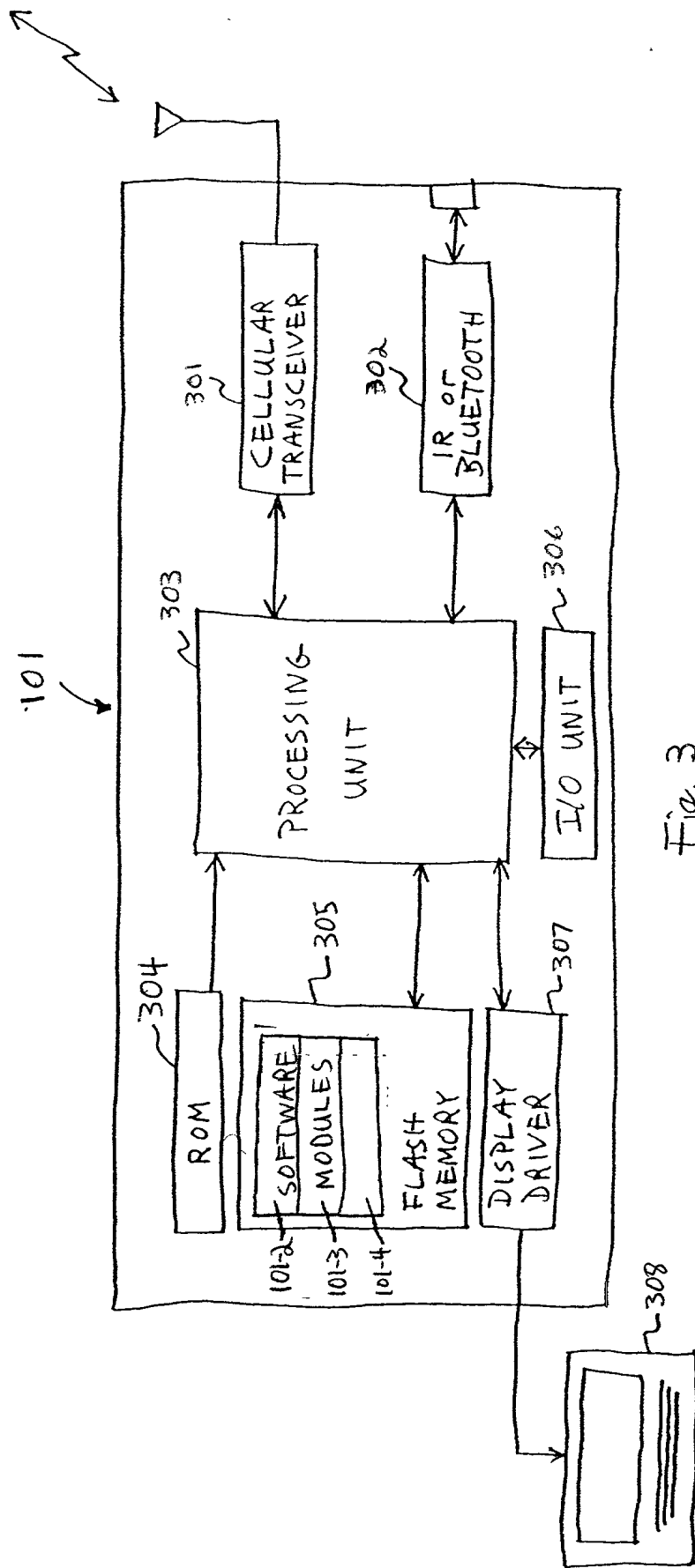


Fig. 3

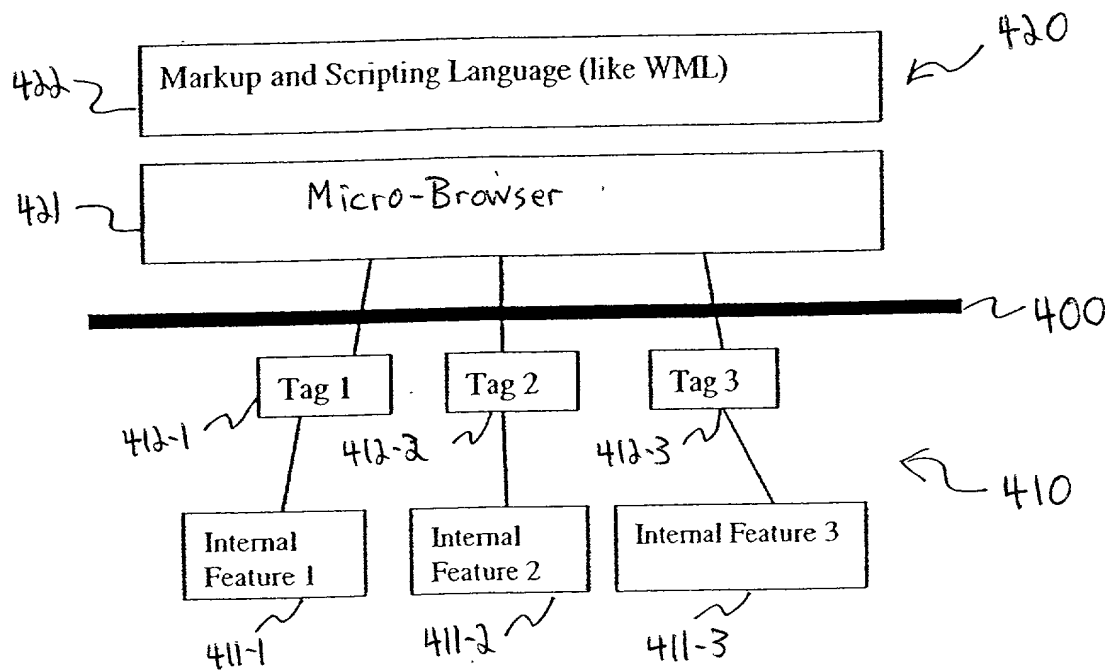


Fig. 4

Virtual Node Tree
501

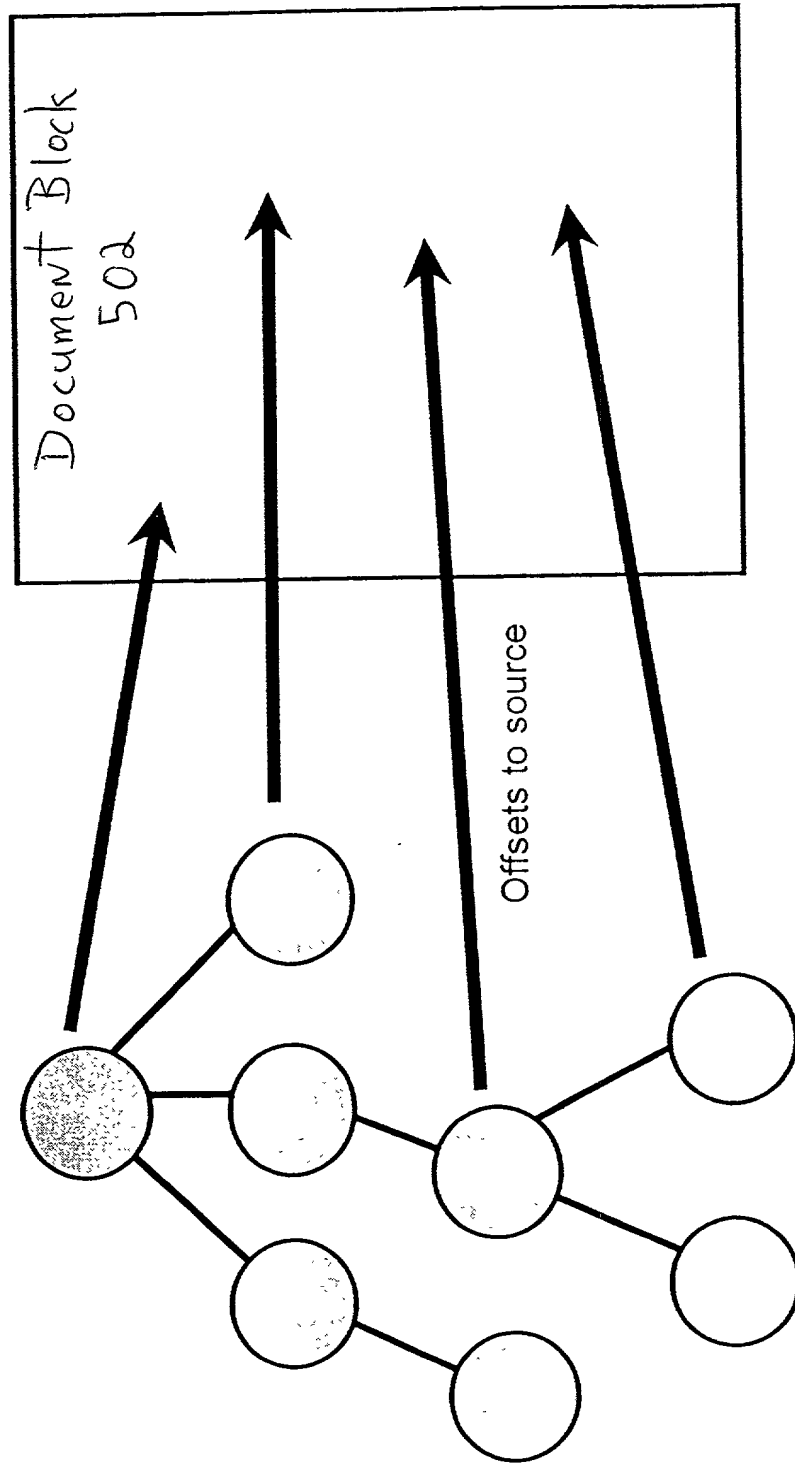
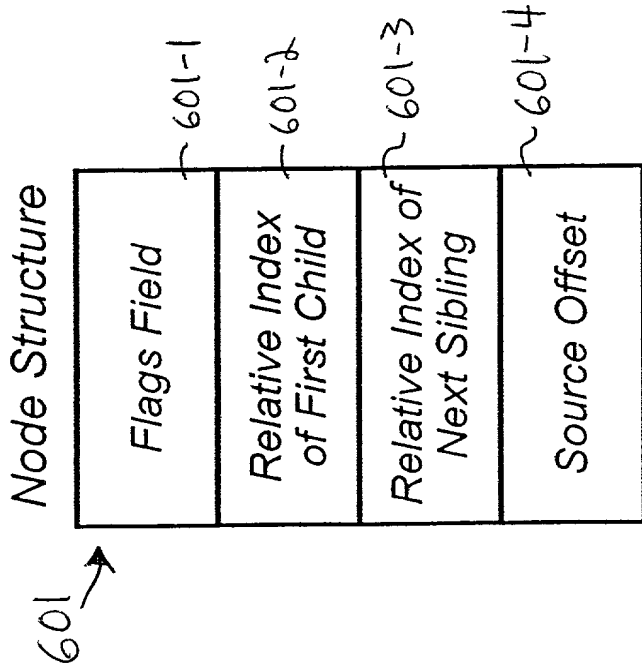
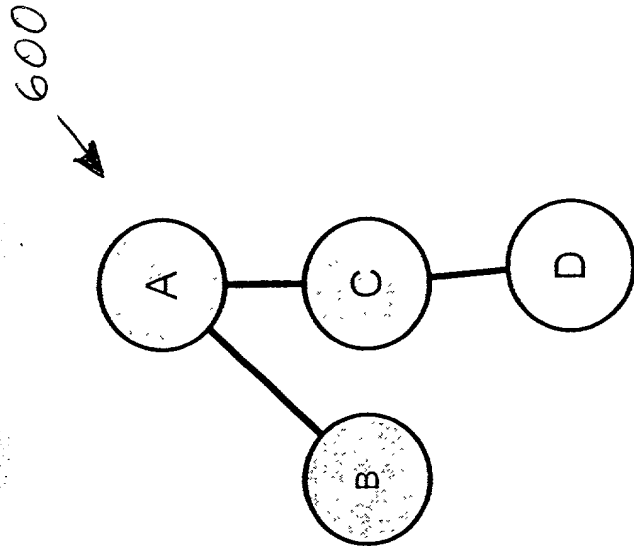


Fig. 5

Fig. 6



Compact Tree Description Block 603

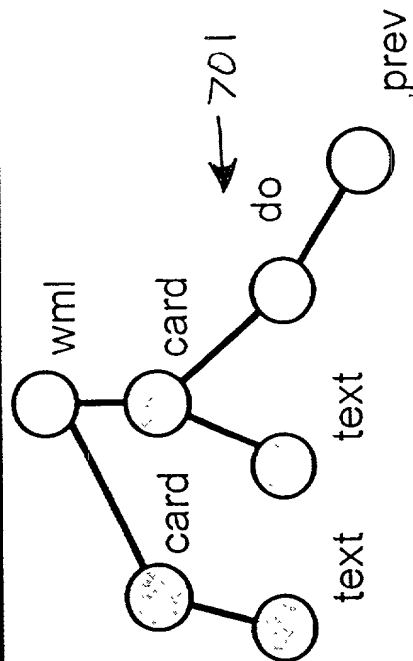
Node A			Node B			Node C			Node D		
	+1	0		0	1	LC	1	-2	LC	0	-1

LC = Last Child Flag Set

"wml" node (root)				"card" node				"text" node				"card" node			
	+1	0	0			+1	5	LC	0	-1	22	LC	+1	-3	44
"text" node				"do" node				"prev" node							
	0	+1	61	LC	+1	-2	78	LC	0	-1	96				

Document Block 708

```
<wml><card id="card1">Welcome to WML</card>
<card id="card2">Compact tree demo<do type
="prev"><prev/></do></card></wml>
```



74

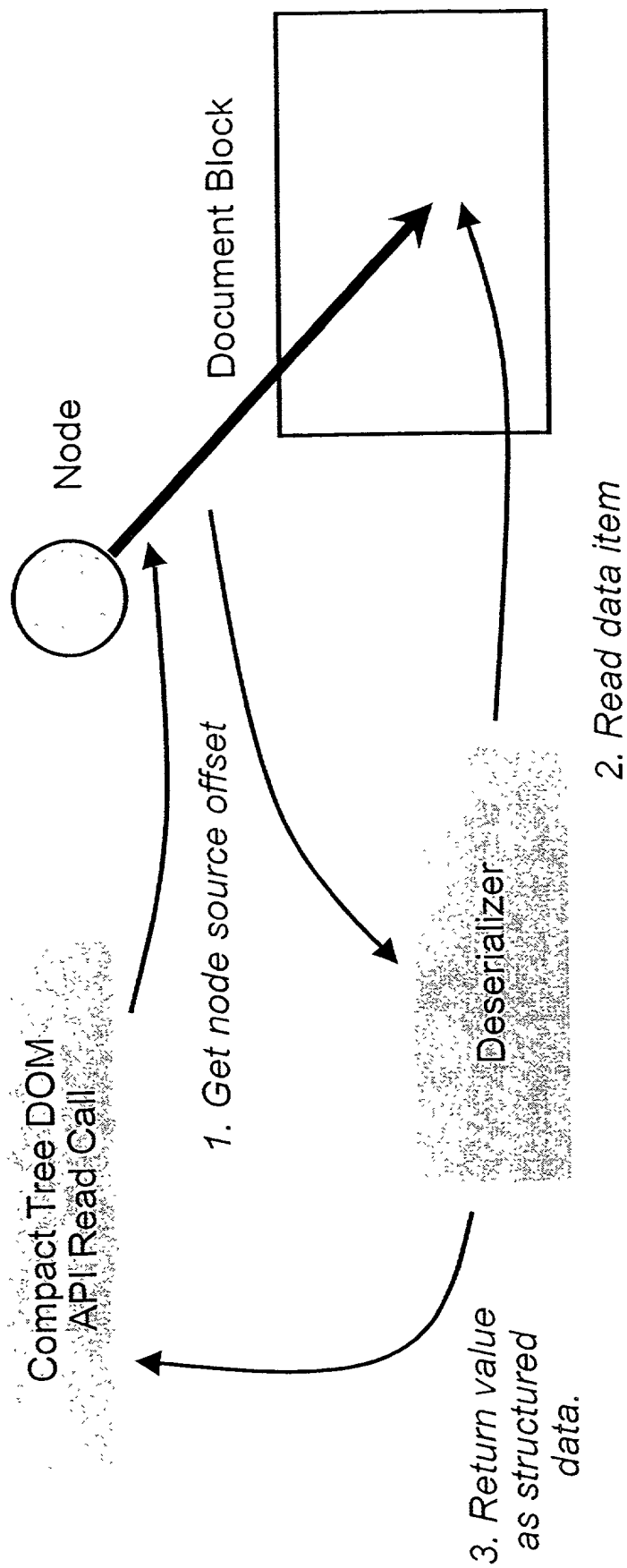


Fig. 8

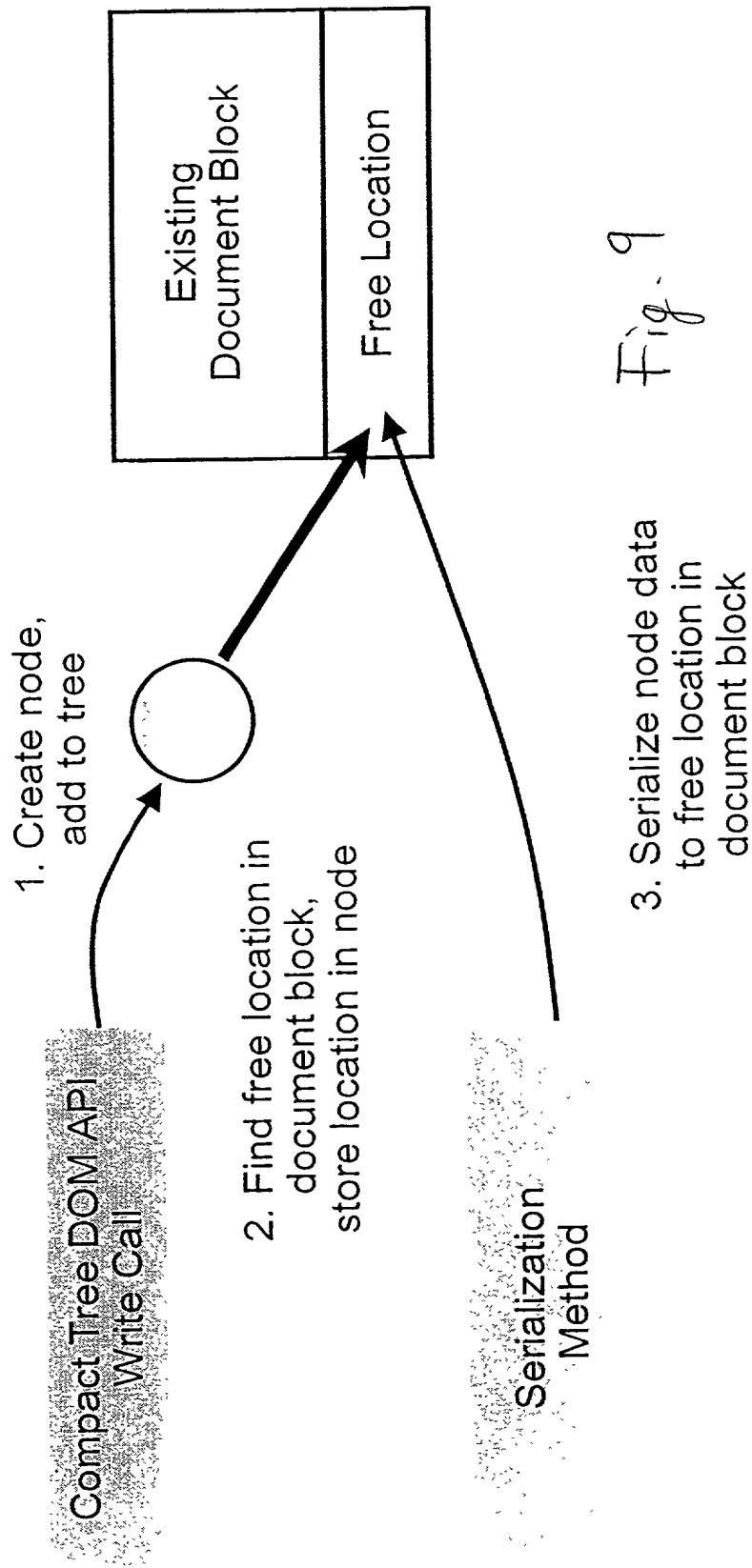


Fig. 9